

Workspace Analysis - Human Figure Modeling



S&T Campaign: Human Sciences
Human Systems Integration

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Research Objective

- Enable early acquisition decisions through the use of workspace design analysis and the development of human figure modeling tools



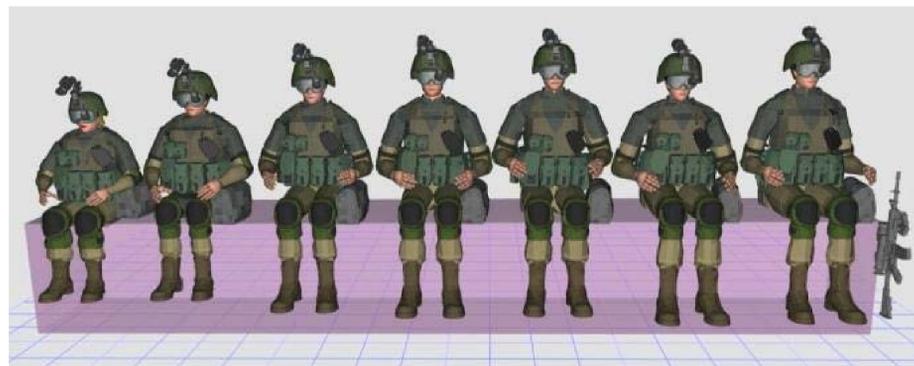
Human Figure Modeling Platform Design Analysis

ARL Facilities and Capabilities Available to Support Collaborative Research

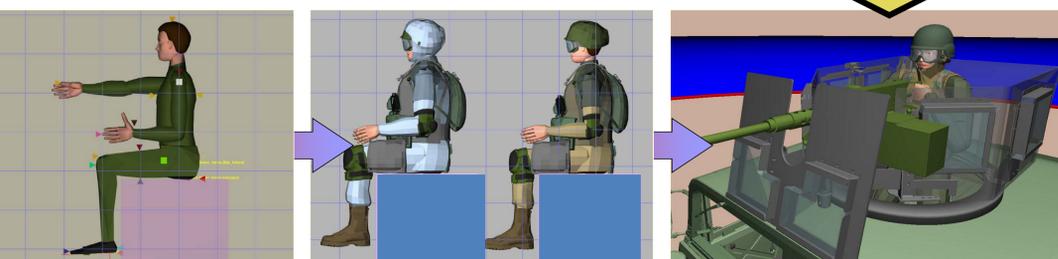
- Software Assessment and Usability Laboratory (SAUL)
 - Reconfigurable laboratory space suitable for empirical data collection and software assessment and usability tests, located at APG within ARL HRED
- Human Figure Modeling Toolset
 - Quantify population accommodation, visibility, ground intercepts, ingress/egress
 - Evaluate concepts iteratively
 - Avoid problems with access to troops (human subjects)
 - Evaluate dynamic postures not just static
 - Establish system requirements and guidelines
 - Evaluate operator and crew workspace
 - Refine model predictions and concepts with field tests on best concepts
 - Assess required maintenance tasks
 - Human Figure Modeling analysts representing decades of experience and a history of successful system assessment and evaluation throughout the acquisition cycle

Challenges

- Incorporate Systems Engineering (SE) methodology into the development of Human Figure Modeling design and analyses process
- Optimize modeling approaches for rapid system design and analysis while balancing model fidelity and accuracy
- Develop holistic approach to building military clothing and equipment models best suited for workspace analysis



Modeling-Based Acquisition Support



Human Figure Modeling Analysis Process

Complementary Expertise/ Facilities/ Capabilities Sought in Collaboration

- Human factors experts, systems engineers and software developers interested in tool development, performance modeling, and Systems Engineering methods including 3D CAD design and analysis
- Expertise in military-relevant tasks with which to expand the context of workspace design analysis
- 3D digital modeling equipment expertise and familiarization with model optimization techniques